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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,804	07/27/2001	Yutaka Takeshima	P/1071-1392	2161

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EXAMINER	
BARR, MICHAEL E	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/916,804	TAKESHIMA, YUTAKA	
	Examiner	Art Unit	
	Michael Barr	1762	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 19-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 19-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/23/2003 has been entered.

Response to Arguments

2. Applicant's arguments and amendments, filed 9/23/2003, have been fully considered and reviewed by the examiner. The examiner acknowledges the addition of Claims 19-21. Claims 1-14 and 19-21 are pending.

The applicant argues that the Hayashi reference does not teach the claimed preheating of the substrate. The applicant's argument is moot in light of the new grounds of rejection.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The applicant argues that there is no motivation to combine the

Tisone reference with the Hayashi and Solayappan references. As indicated in the previous office action, Hayashi et al. and Solayappan et al. do not teach that solution and gas are mixed in the nozzle, atomized in the nozzle, and discharged into the chamber. Not only would one of ordinary skill in the art look to the teaching of Hayashi to determine the best method of performing the deposition process of Hayashi, but one of ordinary skill in the art would look to the prior art to determine and find obvious alternatives to the method deposition procedures of Hayashi, in order to perform the deposition in a known and desired fashion. It is the examiner's position that one of ordinary skill in the art would look to the prior art in order to determine and find a method which would provide the desired dispensing the atomized precursor of Hayashi into the deposition chamber. Tisone teaches dispensing a liquid onto a substrate by atomization of the liquid, where the liquid and atomizing gas are mixed in a two-fluid nozzle, atomized in the nozzle, and discharged out of the nozzle and onto the substrate (Col. 5, lines 10-20). It would have been an obvious modification of the Hayashi et al. and Solayappan et al. process to use the atomization nozzle of Tisone to dispense the solution into the coating chamber of Hayashi et al., with the expectation of providing the desired atomized dispensing/deposition of the coating solution of Hayashi et al. and Solayappan et al., since it is shown by Tisone that such an atomizing nozzle is conventionally used for the atomization and dispensing of liquids onto a substrate surface, which is the desire of Hayashi et al. One of ordinary skill in the art would have recognized that the atomizing nozzle of Tisone is functionally equivalent to the atomizing and dispensing mechanism of Hayashi and thus would have found it an obvious substitution in Hayashi.

The remainder of the applicant's arguments have been addressed by the examiner in previous office actions.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hattori et al.

Hattori et al. teaches forming a complex metal oxide film on a substrate by dissolving at least two metal compounds in a solvent, preheating a substrate in a film-forming chamber to a film forming temperature, introducing the solution into the chamber and forming the metal oxide film on the substrate, wherein the solution can be introduced into the chamber as a mist, i.e. atomized (Col. 6, lines 4-20; Examples 3-4).

5. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,009,928 by Hayashi et al. ("Hayashi '928").

Hayashi '928 teaches forming a metal oxide coating on a substrate by applying a misted precursor, of at least two metal compounds dissolved in a solution, to a substrate, where the substrate is preheated to the oxide film forming temperature in the film-formation chamber (Col. 2, lines 34-46; Examples 1 and 2). Hayashi '928 teaches that the solvent can be water (Example 1), which meets the limitations of Claim 9.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 9, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. in view of JP 2000-36244 by Morita et al. ("Morita").

Hayashi et al. is applied here for the same reasons as given in paragraph 3 of the previous office action. Hayashi et al. does not teach that the substrate is preheated in the film forming chamber to a film forming temperature. Morita teaches forming a metal oxide coating on a substrate by applying a misted precursor to a substrate, where the substrate is preheated to boiling point of the precursor solvent, such that the solvent is evaporated with the deposition of the mist on the substrate leaving a metal oxide precursor film on the substrate which is subsequently treated to form the metal oxide film (Abstract). One of ordinary skill in the art would have recognized that such substrate preheating of Morita performs the same function as the subsequent drying of the precursor solution taught by Hayashi et al. Also, one skilled in the art would have recognized that post treatment times would be diminished by such preheating as the necessary drying time would not be needed, as the solvent is evaporated during the deposition. Therefore, it is the examiner's position that it would have been an obvious modification for one of ordinary skill in the art to substitute the substrate preheating method described by Morita for the post treatment drying in Hayashi et al., with the expectation of

providing the desired and substantially equivalent dried metal oxide film precursor deposition on the substrate and also providing the benefit of decreased post treatment times, with the elimination of the drying requirement, which would also be expected to provide decreased manufacturing times.

8. Claims 2-3, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. and Morita as applied to Claim 1, and further in view of Solayappan et al.

Hayashi et al., Morita, and Solayappan et al. are applied here for the same reasons as given above and in paragraph 3 of the previous office action.

9. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al., Morita, and Solayappan et al., as applied to Claim 3 above, and further in view of Ogi et al.

Hayashi et al., Morita, Solayappan et al., and Ogi et al. are applied here for the same reasons as given above and in paragraph 4 of the previous office action.

10. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. and Morita, as applied to Claim 1 above, and further in view of Ogi et al.

Hayashi et al., Morita, and Ogi et al. are applied here for the same reasons as given above and in paragraph 4 of the previous office action.

11. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al., Morita, and Solayappan et al., as applied to Claim 2 above, and further in view of Tisone.

Hayashi et al., Morita, Solayappan et al., and Tisone are applied here for the same reasons as given above and in paragraph 3 of the previous office action.

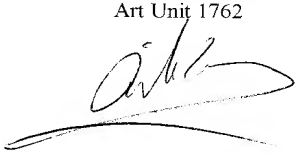
Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Barr whose telephone number is 703-305-7919. The examiner can normally be reached on Monday-Thursday 6:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael Barr
Primary Examiner
Art Unit 1762



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October 15, 2003